



Department of Commerce

Safety & Buildings Division

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Evaluation #

200277-I Revision 3
(Replaces 200078-I)

Wisconsin Building Products Evaluation

Material

METL-SPAN III Insulated
Metal Wall and Roof Panels

Manufacturer

Metl-Span Corporation
1497 N. Kealy
Lewisville, Texas 75057

SCOPE OF EVALUATION

GENERAL: This report evaluates the use of METL-SPAN III sandwich panel as a insulated wall and roof panel for use in the construction of refrigerated facilities and freezer warehouses, manufactured by the METL-SPAN Corporation.

The cited **IBC** requirements below are in accordance with the current **Wisconsin Amended ICC 2000 Code**:

- **Foam Plastic Core Material:** The core (FE-242 polyurethane foam system), of the METL-SPAN III sandwich panels were evaluated as a foam plastic material in accordance with **s. IBC 2603.1, 2603.2, 2603.3, 2603.5.2 and 2603.7.**
- **Wall and Ceiling Panel:** The METL-SPAN III sandwich panels were evaluated as a insulated wall and ceiling panel used in refrigerated facilities and freezer warehouses in accordance with **ss. IBC 2603.4.1.2, 2603.4.1.3, 2603.5.2 and 2603.7.**

The structural performance and thermal transmission properties of the panels are outside the scope of this evaluation and are subject to specific evaluation and approval by the building plan reviewer.

DESCRIPTION AND USE

METL-SPAN III is a factory-assembled metal-faced sandwich panel with a foam-plastic core, available in a range of standard widths and in lengths up to 59 feet. The panels are used in exterior nonbearing walls, interior nonbearing partition walls and as roof/ceiling panels. The insulation thickness varies between 2 and 6 inches. The standard facing is 24- or 26-gauge galvanized steel. Stainless steel facings are also covered under this approval. A variety of surface profiles and joint connections are available.

TESTS AND RESULTS

ASTM E-84 testing on the FE-242 polyurethane foam system showed a flame spread rating of 20 and a smoke developed rating of 160, up to 6-inches thick.

Factory Mutual **FM 4880** tests resulted in I-60 and I-90 classifications for the METL-SPAN roof system. The specific rating depends on the purlin spacing. FM 4880 tests also showed satisfactory performance in the unprotected 25-foot high and 50-foot high full-scale room corner tests.

A **FMRC** 25-foot High Corner Test was previously conducted under J.I. OW4A6. AM with finished 6-inch thick METL-SPAN III panels produced at METL-SPAN Corporation in Lewisville, TX with 0.0217-inch galvanized steel facers and the FE-242 polyurethane foam system.

Flammability characterization and small scale identification testing (**ASTM E84**, **ASTM E711**, **ASTM D1929**, and **ASTM D1622**) of polyurethane core foam produced with the FE-242 polyurethane foam system at METL-SPAN Corporation in Lewisville, TX were previously conducted under J.I. OB2A5. AM.

ASTMD1929 ignition properties test resulted in a flash-ignition temperature of 880°F (470°C) and a self-ignition temperature of 895°F (480°C).

Test results from this and previous Approval programs sponsored by METL-SPAN Corporation indicate that a maximum of 6 inches (152 mm), thick R-Span III insulated wall and roof/ceiling panels with a minimum of 0.0170-inch (0.43 mm) thick steel facers, and insulated with the FE-242 polyurethane foam insulation system, meet the FMRC Standard **4880** requirements for Class 1 Approval with no height restriction.

The tested constructions meet the FMRC Approval criteria and listed in the FMRC Approval Guide.

All joints and connections shall be in accordance with the manufacturer's recommendations.

LIMITATIONS OF APPROVAL

- **Wall and Ceiling Panel: Section IBC 2603.7** allows the use of the METL-SPAN III panel without a thermal barrier and automatic sprinkler system based on diversified tests with no height restrictions. The METL-SPAN III panels are approved for use with no height restrictions without a thermal barrier and a automatic sprinkler system (for refrigerated facilities, walk-in coolers or freezers over 400 square feet, and freezer warehouses), required under ss. **IBC 2603.3** and **Exception 2.**, and ss. **IBC 2603.4.1.2**, **2603.4.1.3** and **2603.5.2**.

NOTES:

1. For refrigerated buildings and freezer warehouses, building heights exceeding 50 feet, and panels up to 6 inches thick maximum, thermal barriers on both sides of the panel shall be required for proper protection.
2. Other chapters of the code may require an automatic sprinkler system based on limitations of occupancy, area, height, etc., or may specify stricter height limitations.

The steel facings of the panels shall be positively secured to the foam core by 1) securing the entire panel assembly to supporting structural members with mechanical fasteners or 2) positive securing of the interior panel face to the exterior panel face with mechanical fasteners.

Installation shall be in accordance with the Factory Mutual Research listings, the manufacturer's instructions and this evaluation. In the event of conflicts, the more restrictive requirement shall govern.

This approval will be valid through December 31, 2007, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date: March 2, 2004

Approval Date: April 23, 2003

By: _____

Lee E. Finley, Jr.

Product & Material Review

Integrated Services Bureau

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